

**06792** = **7920**

10  
15  
20  
25

A semiconductor mechanical sensor having a new structure in which a S/N ratio is improved. In the central portion of a silicon substrate 1, a recess portion 2 is formed which includes a beam structure. A weight is formed at the tip of the beam, and in the bottom surface of the weight in the bottom surface of the recess portion 2 facing the same, an electrode 5 is formed. An alternating current electric power is applied between the weight portion 4 and the electrode 5 so that static electricity is created and the weight is excited by the static electricity. In an axial direction which is perpendicular to the direction of the excitation of the weight, an electrode 6 is disposed to face one surface of the weight and a wall surface of the substrate which faces the same. A change in a capacitance between the facing electrodes is electrically detected, and therefore, a change in a physical force acting in the same direction is detected.